

What is claimed is:

1. A substantially purified nucleic acid molecule comprising a nucleic acid sequence with at least 70% sequence identity to a sequence selected from the group consisting of SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:4, complements thereof, and 5 fragments of either.

2. A recombinant nucleic acid molecule comprising as operably linked components: (a) a promoter that functions in a plant cell to cause production of an mRNA molecule; and (b) a nucleic acid sequence that hybridizes under high stringency conditions to a nucleic acid sequence selected from the group consisting of SEQ ID NO:4, SEQ ID NO:12, SEQ ID NO:13, 10 and SEQ ID NO:14, complements thereof, and fragments of either.

3. A transformed soybean plant having a nucleic acid molecule that comprises (a) a first promoter operably linked to a first nucleic acid molecule having a first nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NOs:1 through SEQ ID NO:2, complements thereof, and fragments of 15 either, and (b) a second nucleic acid molecule with a second nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NO:4 through SEQ ID NO:14, complements thereof, and fragments of either, wherein the second nucleic acid molecule is operably linked to the first promoter in a polycistronic configuration or to a second promoter.

20 4. The transformed soybean plant according to claim 3, wherein a single promoter is operably linked to the first and second nucleic acid molecules.

5. The transformed soybean plant according to claim 4, wherein the single promoter is a seed specific promoter.

25 6. The transformed soybean plant according to claim 3, wherein the first promoter and the second promoter are both seed specific promoters.

7. The transformed soybean plant according to claim 6, wherein the first promoter and the second promoter are both 7S promoters.

8. The transformed soybean plant according to claim 3, wherein the first promoter is different from the second promoter.

5 9. The transformed soybean plant according to claim 8, wherein the first promoter is a 7S promoter and the second promoter is a napin promoter.

10. The transformed soybean plant according to claim 3, wherein said first nucleic acid molecule is transcribed and is capable of selectively reducing the level of a transcript encoded by a *FAD2-1* gene while leaving the level of a transcript encoded by a *FAD2-2* gene 10 partially unaffected.

11. The transformed soybean plant according to claim 3, wherein said first nucleic acid molecule is transcribed and is capable of selectively reducing the level of a transcript encoded by a *FAD2-1* gene while leaving the level of a transcript encoded by a *FAD2-2* gene substantially unaffected.

15 12. The transformed soybean plant according to claim 3, wherein said first nucleic acid molecule is transcribed and is capable of selectively reducing the level of a transcript encoded by a *FAD2-1* gene while leaving the level of a transcript encoded by a *FAD2-2* gene essentially unaffected.

13. A transformed soybean plant having two or more nucleic acid molecules wherein 20 each nucleic acid molecule is operably linked to a promoter and wherein each nucleic acid molecule has a nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1, 2, 4-14, complements thereof, and fragments of either.

25 14. The transformed soybean plant according to claim 13, wherein a first nucleic acid molecule is transcribed and is capable of selectively reducing the level of a transcript encoded

by a first *FAD* gene while leaving the level of a transcript encoded by a second *FAD* gene partially unaffected, substantially unaffected or essentially unaffected.

15. A transformed soybean plant, wherein the level of a transcript encoded by a gene selected from the group consisting of *FAD2-1A*, *FAD2-1B*, *FAD2-2B*, *FAD3-1A*, *FAD3-1B*, 5 *FAD3-1C* is selectively reduced while leaving the level of a transcript encoded by a different gene selected from the group consisting of *FAD2-1A*, *FAD2-1B*, *FAD2-2B*, *FAD3-1A*, *FAD3-1B*, *FAD3-1C* at least partially unaffected.

16. A method of producing a soybean plant having a seed with reduced linolenic acid content comprising: transforming a soybean plant with a nucleic acid molecule that comprises 10 (a) a first promoter operably linked to a first nucleic acid molecule having a first nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1, 2, complements thereof, and fragments of either, and (b) a second nucleic acid molecule having a second nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NO:4 through SEQ ID 15 NO:14, complements thereof, and fragments of either, wherein the second nucleic acid molecule is operably linked to the first promoter or a second promoter; and growing said plant, wherein said plant produces seed with less linolenic acid than a plant having a similar genetic background but lacking said nucleic acid molecule.

17. A method of producing a soybean plant having a seed with increased oleic acid content comprising: transforming a soybean plant with a nucleic acid molecule that comprises 20 (a) a first promoter operably linked to a first nucleic acid molecule having a first nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NO: 1 through SEQ ID NO:2, complements thereof, and fragments of either, and (b) a second nucleic acid molecule having a second nucleic acid sequence that has 25 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NO:4 through SEQ ID NO:14, complements thereof, and fragments of either, wherein the second nucleic acid molecule is operably linked to the first promoter or a second promoter; and

growing said plant, wherein said plant produces seed with more oleic acid than a plant having a similar genetic background but lacking said nucleic acid molecule.

18. A method of producing a plant having a seed with a modified oil composition comprising: transforming a plant with a nucleic acid molecule that comprises, as operably linked components, a first promoter and a first nucleic acid molecule having a first nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1, 2, 4 through 14, complements thereof, and fragments of either; and growing said plant, wherein said plant produces seed with a modified oil composition compared to a plant having a similar genetic background but lacking said nucleic acid molecule.

10 19. A method of producing a plant having a seed with an altered ratio of monounsaturated to polyunsaturated fatty acids comprising: transforming a plant with a construct that comprises, as operably linked components, two or more nucleic acid molecules, each having a nucleic acid sequence that has 85% or greater identity to a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1, 2, 4 through 14, complements thereof, 15 and fragments of either, wherein each nucleic acid molecule is operably linked to a promoter; and, growing said plant, wherein said plant produces seed with an altered ratio of monounsaturated to polyunsaturated fatty acids compared to a plant having a similar genetic background but lacking said two or more nucleic acid molecules.